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tools so that, for example, a non-used/non-worn area on spherical frictional slider 24 can be brought into contact with surface 26 for multiple or repetitive testing.

10) Measurement arm 22 is capable of nearly 360° travel in a circular path along surface 26. According to the embodiment depicted in the Figures, after travel in a first direction, because of the design of gear assembly 34, measurement arm 22 reverses direction and returns to its starting position. Using such a circular path minimizes dependence of the coefficient of friction on any directional or anisotropic properties of surface 26.

11) Measurement arm 22 may be fabricated from any suitable material such as a thin metallic strip or polymeric strip that can undergo limited bending under the load conditions anticipated in the course of any frictional measurement. Thus, tangential force detector 28 is incorporated into measurement arm 22 to measure the frictional force caused by spherical friction slider 24 traversing surface 26 as manifested by limited bending of measurement arm 22. One such suitable tangential force detector 28, and that depicted in the Figures, comprises one or an array of strain gauges mounted on the surface of measurement arm 22~~parallel- 22~~ parallel to the normal plane of surface 26 to form a ~~whetstone~~ Wheatstone bridge.

13) As is well known to the practioners of the tribological arts, the coefficient of friction or COF is not an absolute value, but rather a relative measure of the force of resistance encountered when two surfaces of the same or different materials slide